

What is claimed is:

1. A routing system comprising:

(A) an active system routing device including:

5 a storage unit storing a first address and
a second address in a way that maps the first address
and the second address to each other on the basis
of a registration request sent from a mobile node
having the first address and the second address,
the registration request containing the first
10 address and the second address mapping to each other;

a general data forwarding unit forwarding
general data to the second address according to said
storage unit; and

15 a registration request forwarding unit
forwarding the registration request to a standby
system routing device; and

(B) a standby system routing device, in addition
to a storage unit and a general data forwarding unit
corresponding to those included in said active system
20 routing device, including:

a monitoring unit monitoring a status of said
active system routing device; and

25 a switchover unit switching over said standby
system routing device to an active system if said
monitoring unit judges that a fault occurs in said
active system routing device.

2. A routing system according to claim 1, wherein
said active system routing device further includes a
registration acknowledgement sending unit sending a
registration acknowledgement to the registration request
5 to said mobile node, and

said standby system routing device further includes
an acknowledgement stopping unit which stops sending
registration acknowledgement to the forwarded
registration request.

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3. A routing system according to claim 1, wherein
said monitoring unit monitors the status of said active
system routing device by use of ICMP (Internet Control
Message Protocol).

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4. A routing system according to claim 1, wherein
said registration request forwarding unit forwards a part
of the registration request received by said active system
routing device to said standby system routing device.

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5. A routing system according to claim 1, wherein
said storage unit further stores a value of priority level
corresponding to the first address or the second address,
and

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said registration request forwarding unit controls
a process of forwarding the registration request in
accordance with the value of priority level stored on said

storage unit in a way that corresponds the value of priority level to the first address or the second address which are contained in the registration request.

5 6. A routing system according to claim 5, wherein said registration request forwarding unit controls, based on the value of priority level, whether the registration request is forwarded or not.

10 7. A routing system according to claim 5, wherein said registration request forwarding unit controls, based on the value of priority level, the registration request to be forwarded each time the registration request is received, or the registration request to be forwarded once
15 for a plurality of receipts thereof.

 8. A routing system according to claim 1, wherein said storage unit further stores statistic information corresponding to the first address or the second address,
20 said active system routing device further includes a statistic information collecting unit collecting the statistic information on communications performed between said mobile node and said active system routing device and storing said storage unit with the collected
25 statistic information, and

 said registration request forwarding unit controls a process of forwarding the registration request in

accordance with a value of the statistic information stored,
mapping to the first address or the second address
contained in the registration request, on said storage
unit.

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9. A routing system according to claim 8, wherein
said registration request forwarding unit controls, based
on the value of the statistic information, whether the
registration request is forwarded or not.

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10. A routing system according to claim 8, wherein
said registration request forwarding unit controls, based
on the value of the statistic information, the registration
request to be forwarded each time the registration request
15 is received, or the registration request to be forwarded
once for a plurality of receipts thereof.

11. A routing system according to claim 1, wherein
said active system routing device further includes a load
20 information obtaining unit obtaining load information of
said active system routing device, and

said registration request forwarding unit further
controls the process of forwarding the registration
request on the basis of the load information obtained by
25 said load information obtaining unit.

12. A routing system comprising:

(A) an active system routing device including:

5 a storage unit storing a first address and
a second address in a way that maps the first address
and the second address to each other on the basis
of a registration request sent from a mobile node
having the first address and the second address,
the registration request containing the first
address and the second address mapping to each other;

10 a general data forwarding unit forwarding
general data to the second address according to said
storage unit; and

an address transmitting unit transmitting the
second address stored on said storage unit to a
standby system routing device; and

15 (B) a standby system routing device, in addition
to a storage unit and a general data forwarding unit
corresponding to those included in said active system
routing device, including:

20 a registering unit registering said storage
unit with the second address received from said
active system routing device;

a monitoring unit monitoring a status of said
active system routing device;

25 a switchover unit switching over said standby
system routing device to an active system if said
monitoring unit judges that a fault occurs in said
active system routing device; and

a transmission request unit sending a
transmission request for transmitting the
registration request to the second address stored
on said storage unit when said switchover unit
5 executes the switchover.

13. A routing system according to claim 12, wherein
said storage unit further stores a value of priority level
corresponding to the first address or the second address,
10 and

said address transmitting unit controls the
transmitting process in accordance with the value of
priority level.

15 14. A routing system according to claim 12, wherein
said storage unit further stores statistic information
corresponding to the first address or the second address,
said active system routing device further includes
a statistic information collecting unit collecting the
20 statistic information on communications performed
between said mobile node and said active system routing
device and storing said storage unit with the collected
statistic information, and

said address transmitting unit controls the process
25 of transmitting the second address in accordance with the
value of the statistic information.

15. A routing system according to claim 12, wherein said active system routing device further includes a load information obtaining unit obtaining load information of said self-device, and

5 said address transmitting unit further controls the process on the basis of the load information obtained by said load information obtaining unit.

16. A routing system according to claim 12, wherein
10 said storage unit further stores a value of priority level corresponding to the first address or the second address,

 said address transmitting unit further transmits, in addition to the second address, the value of priority level,

15 said registering unit further registers said storage unit with the value of priority level mapping to the second address, and

 said transmission request unit controls the process of sending the transmission request in accordance with
20 the value of priority level.

17. A routing system according to claim 12, wherein said storage unit further stores statistic information corresponding to the first address or the second address,

25 said active system routing device further includes a statistic information collecting unit collecting the statistic information on communications performed

between said mobile node and said active system routing device and storing said storage unit with the collected statistic information,

5 said address transmitting unit further transmits, in addition to the second address, the statistic information,

 said registering unit further registers said storage unit with the statistic information mapping to the second address, and

10 said transmission request unit controls the process of sending the transmission request in accordance with the statistic information.

18. A routing system comprising:

15 (A) an active system routing device including:

 a storage unit storing a first address and a second address in a way that maps the first address and the second address to each other on the basis of a registration request sent from a mobile node having the first address and the second address, the registration request containing the first address and the second address mapping to each other; and

20 a general data forwarding unit forwarding general data to the second address according to said storage unit;

 (B) a standby system routing device including a

storage unit corresponding to the storage unit included in the active device and a general data forwarding unit corresponding to the general data forwarding unit included in the active device; and

5 (C) an allocating device including:

an allocation storage unit storing the first address of said mobile node and addresses of said active system routing device and of said standby system routing devices in a way that maps these
10 addresses to each other; and

a registration request forwarding unit forwarding, the registration request to said addresses of said active system routing device and said standby system routing device, said addresses
15 mapping to the first address contained in the received registration request.

19. A routing system according to claim 18, wherein each of said active system routing device and said standby
20 system routing device further includes a registration acknowledgement sending unit sending a registration acknowledgement to the registration request to said mobile node, and

said allocating device further includes a discarding
25 unit discarding the registration acknowledgement sent from said standby system routing device.

20. A routing system according to claim 18, wherein said allocation storage unit further stores a priority level corresponding to the first address, and

5 said registration request forwarding unit controls a process of forwarding the registration request in accordance with a value of priority level stored, mapping to the first address contained in the registration request, on said allocation storage unit.

10 21. A routing system according to claim 1, wherein the first address is an address used by said mobile node in a network where said active system routing device and said standby system routing device are located, and

15 the second address is an address used by said mobile node in a network different from the network where said active system routing device and said standby system routing device are located.

22. An active system routing device comprising:

20 a storage unit storing a first address and a second address in a way that maps the first address and the second address to each other on the basis of a registration request sent from a mobile node having the first address and the second address, the registration request containing the first address and the second address mapping to each other;

25 a general data forwarding unit forwarding general data to the second address according to said storage unit;

and

a registration request forwarding unit forwarding the registration request to said standby system routing device.

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23. A standby system routing device comprising:

a receiving unit receiving, from an active system routing device, a registration request containing a first address and a second address held by a mobile node;

10 a storage unit storing the first address and the second address in a way that maps the first and second addresses to each other on the basis of the registration request received;

a general data forwarding unit forwarding general
15 data to the second address according to said storage unit;

a monitoring unit monitoring a status of said active system routing device; and

a switchover unit switching over said standby system routing device to an active system if said monitoring unit
20 judges that a fault occurs in said active system routing device.

24. A network system comprising:

an active system home agent (HA) updating a control
25 table upon receiving a location registration message and forwarding the location registration message to a standby system home agent (HA); and

a standby system home agent (HA) updating a backup control table upon receiving the location registration message.